EDUCATIONAL OCCUPANCY PLAN CORRECTION LIST

Plans have been reviewed for compliance with the 1999 Standard Building Code (SBC), 1997 Standard Mechanical Code (SMC), 2003 National Fire Codes (NFPA Standards), 2003 NFPA 101 *Life Safety Code*, and the 1974 State Public Building Accessibility Act (2002 North Carolina Accessibility Code with the 2004 Amendments). The following list does not necessarily include all deficiencies. See additional items on the cover sheet.

PLEASE NOTE: Items listed require correction by revised plans, addenda, field orders, or change orders before plans can be approved for construction. Answers in letter form are not acceptable. **Starting construction before plans approval may be considered as just cause, by the State, to issue a stop work order. [Rule 0780-2-3-.02(1)]**

I. PROCEDURES

*1. Provide two copies of plans and one copy of specifications sealed (with signature and date) by a Tennessee registrant in accordance with the Architects and Engineers Licensing Law Rules. [Rule 0780-2-3-.03 and A&E Rule 0120-2-.08(3)] If revisions are submitted, two copies are required.

*2. Provide a second set of sealed final plans and revisions for the job site set. [Rule 0780]

3. Buildings must be designed to the minimum State of Tennessee adopted codes and standards.

   Provide the following code information on the cover sheet of the plans for new and existing buildings:

   A. SBCCI Standard Building Code, 1999 edition, including SBCCI Standard Gas Code, 1999 edition, and SBCCI Standard Mechanical Code, 1997 edition
   B. Uniform Fire Code (NFPA 1), 2003 edition, including each reference in NFPA 1, Chapter 2 (excluding NFPA 5000), published by the National Fire Protection Association. Each reference in NFPA 1 Uniform Fire Code, Chapter 2 to an NFPA code or standard shall be deemed to be the edition printed in the National Fire Codes, 2003 edition
   C. 1974 State Public Building Accessibility Act (2002 North Carolina Accessibility Code with the 2004 Amendments)
   D. Occupancy Group per Chapter 6, NFPA 101, 2003 edition
   E. Identify whether there is a proposed change of occupancy for this project. Show previous and proposed occupancies
   F. Construction Type, protected or unprotected, sprinklered or unsprinklered per Chapter 6, 1999 SBC
   G. Number of stories, and/or height of building
   H. Area of building according to SBC Table 500 for new and existing. Show building area increase calculations per SBC 503.3

4. Provide a summary statement explaining the project's Scope of Work on the design drawing that shows the project's codes analysis.

5. Provide a Life Safety Plan showing: Occupant load with occupant load factors for each space based on its intended use; number of occupants using exits according to design as compared to exit capacity of door or stair (which ever is more restrictive); travel distances; and accessible means of egress to a public way identifying location of any area of refuge, required exterior exit doors, exit stair landings, and any elevator for unsprinklered buildings or for sprinklered buildings show the access to the public way from two remote exits of the building. Show all fire rated wall limits for occupancy separations, building compartmentation walls, exit access corridors, stair exits, elevator shafts, mechanical system shafts, and separations from hazards such as storage rooms (50 sf or larger), janitor closets, gas furnace rooms, and laboratories.

6. Complete the Plans Review Submittal Form (PRSF) and remit the required fee. [Rule 0780]

7. The fee has been calculated incorrectly. Balance due is _____. We are refunding _____. (The refund process takes approximately 6 to 8 weeks.)

8. Information on the plans review submittal form is incorrect as follows:
_____

9. Code deficiencies cited in the inspection report (dated/requested) _____ must be addressed.

10. Provide the following flow test data on the plans for fire hydrant(s) used to meet the 500 feet or less hose lay requirement in accordance with the local authority having jurisdiction. [2002 NFPA 24 7.2.1] Show flow test data next to the hydrant tested. Flow test must have been conducted within the last six months.

    A. Static pressure _____ psi
       Residual pressure _____ psi (20 psi minimum)
       Flow _____ gpm (500-gpm minimum)
       [Department of Environment & Conservation Rules and Regulations 1200-5-1-.17 paragraph 18]
    B. Party responsible for taking test (name and address)
    C. Date test taken: _____ Time test taken: ___ a.m./p.m.
    D. Elevation of test hydrant: _____

11. Provide hydraulic design values for any new proposed fire hydrant(s) or water main(s) that are not readily available near the building site. Provide theoretical water supply hydraulic flow (gpm) and residual pressure (psi) design values with preliminary design calculations on the plans furnished by the engineer of record. Show the hydraulic design values next to any proposed fire hydrant(s) (minimum 500 gpm at 20 psi) or for sprinklered buildings, at the base of the sprinkler system riser(s) (required gpm and pressure for the required sprinkler supply vs. demand). When the fire hydrant(s) are in service, provide a copy of the flow test to the Deputy State Fire Marshal inspector and State Plans Reviewer for the project.

*12. Prior to any approval being granted, items with an asterisk (*) must be resolved.

13. One or more of the following forms are enclosed:

A. Plans Review Submittal Form
B. Accessibility Correction List
C. Accessible Means of Egress Correction List
D. Hood and Duct Design Intent
E. Sprinkler Design Intent
F. Standpipe Design Intent
G. Fire Pump Design Intent
H. Tank
I. Other _____

14. **NOTE: In order to expedite processing of this project please refer to "TFM NUMBER" on transmittal letter when submitting any correspondence, plans, and specifications.**

II. GENERAL

*1. Identify use of rooms and spaces.

*2. Provide design live load values on plans for wind, roof, floor, stairs, guard and hand railings, seismic per SBC 1607.1.2, etc. [SBC Chapter 16] For existing buildings that have not been reviewed and approved by our office, provide "as built" plans from a Tennessee licensed structural engineer or an evaluation report sealed, signed, and dated from a Tennessee licensed structural engineer. The evaluation report must show the design live loads for wind, roof, floors, stairs guard, hand railings, and seismic.

3. Provide door and door hardware schedule. Need fire ratings.

4. Provide glazing schedule. Specify size and type of glazing.

5. Provide interior finish schedule.

6. Provide a complete legend for _____.

7. Provide legend for all fire rated wall enclosures to identify specific ratings and their limits (i.e., smoke partitions or barriers, 30 minute, one, two, and four-hour ratings).

8. Show wall fire ratings on structural, mechanical, plumbing, electrical, and fire protection drawings.

9. Provide plans or specifications on folding bleachers. [NFPA 102] Bleacher aisles must comply with NFPA 101 12.2.5.5 and 12.2.5.6.

10. Provide two copies of structural shop drawings for pre-manufactured buildings to include manufacturer's name and model number or other designation. This is needed for SBCCI pre-compliance verification. Otherwise, send two copies of structural drawings, stamped by a structural engineer registered by the State of Tennessee. Show seismic information per SBC 1607.1.2. **The shop drawings must be approved prior to erecting steel.**

11. Submit detailed layout of seating arrangement for _____. [NFPA 101 12.2.5.9 and NCAC Chapter 22]

12. FIRE STOPPING Specify test number, hourly rating, and provide detail(s) in their entirety which include application instructions, material specifications and design illustrations without modification or manipulation directly on plans of current U.L. (or other approved third party nationally recognized testing laboratory) tested systems for each size and type of penetrating object such as metallic and nonmetallic electrical, plumbing, HVAC piping and ductwork, fire protection piping, electrical wiring, or conduit through fire resistive assemblies SBC 705.4 and NFPA 101 8.3.5. The details must be provided directly in the plan set and not in Architectural Supplemental Instruction (ASI), addenda, or within the specifications or project manual. Provide plumbing details for toilet, shower, and tub penetrations at 1-hour fire rated floor assemblies and plumbing penetrations within walls when penetrating 1-hour rated floor assemblies. UL permits the free duplication and inclusion for design professionals in their designs (see "Important Information For Users Of This Directory, Use of This Directory" in Volume 1 of the most recent printed Fire Resistance Directory - or - at the bottom of each "record" (i.e., UL system number) on the online certification directory available http://www.ul.com for UL's terms and conditions of use).

13. Pipes, raceways, and cable trays (regardless of size) penetrating ***fire walls*** having a required 3-hour or greater fire resistance rating shall be positioned to pass through the wall no more than 3 ft above the finished floor level. A steel sleeve of a size to allow an approximate 1-in. clearance between the sleeve and the pipe or raceway shall be provided for each pipe or raceway. [2000 NFPA 221 6.1]

14. WALLS, CEILINGS, FLOOR/CEILING AND ROOF ASSEMBLIES Show what UL or other assembly number is being used for the fire-rated roof/ceiling, floor/ceiling, and wall assemblies. [SBC 701.2] Specify that all component parts comply with tested assemblies. Provide detail(s) in their entirety which include design illustrations and material specifications without modification or manipulation directly on plans of current U.L. (or other approved third party nationally recognized testing laboratory) tested assembly. The details must be provided directly in the plan set and not in Architectural Supplemental Instruction (ASI), addenda, or within the specifications or project manual. UL permits the free duplication and inclusion for design professionals in their designs (see "Important Information For Users Of This Directory, Use of This Directory" in Volume 1 of the most recent printed Fire Resistance Directory - or - at the bottom of each "record" (i.e., UL system number) on the online certification directory available http://www.ul.com for UL's terms and conditions of use).

15. JOINT SYSTEMS Provide design number, hourly rating, and detail(s) in their entirety which include design illustrations, material specifications without modification or manipulation directly on plans of current U.L. (or other approved third party nationally recognized testing laboratory) tested assembly for fire rated assembly connections such as (wall-to-wall, floor-to-floor, floor-to-wall, head-of-wall, bottom-of-wall, joints) where not inherently tight. The details must be provided directly in the plan set and not in Architectural Supplemental Instruction (ASI), addenda, or within the specifications or project manual. UL permits the free duplication and inclusion for design professionals in their designs (see "Important Information For Users Of This Directory, Use of This Directory" in Volume 1 of the most recent printed Fire Resistance Directory - or - at the bottom of each "record" (i.e., UL system number) on the online certification directory available http://www.ul.com for UL's terms and conditions of use). _

16. Provide a reflected ceiling plan showing lights, diffusers, sprinkler heads, smoke detectors, etc.

17. Provide elevator key lock box mounted at 72" AFF to center of the box by each bank of elevators for all University of Tennessee and/or Tennessee Board of Regents residential occupancies containing elevators. The lock box must meet the requirements as specified by the Tennessee Department of Labor and Workforce Development (contact the Division of Boiler & Elevator, Mines, Labor Standards, and Research & Statistics for specifications for more details) and be operated by a common key. Provide mounting details and specifications in plans. [TCA 49-7-136(a)]

18. Provide elevator key lock box mounted at 72" AFF to center of the box by each bank of elevators for all state-owned public buildings under the Department of General Services' control containing elevators. The lock box must meet the requirements as specified by the Tennessee Department of Labor and Workforce Development (contact the Division of Boiler & Elevator, Mines, Labor Standards, and Research & Statistics for specifications for more details) and be operated by a common key. Provide mounting details and specifications in plans. [TCA 4-3-1114(a)]

III. SITE

*1. Show location and footprint of all existing structures, property lines, grade elevations, water mains and other utilities, fire hydrants, fire department access and all ingress/egress to public ways. Include size and location of LP-Gas storage tanks (2001 NFPA 58) and any other above ground storage tanks (2000 NFPA 30 and 30A).

2. Fire department access must be 20 feet wide with a 13 feet 6 inches minimum vertical clearance and a dead end cannot exceed 150 feet unless an approved turnaround radius is provided. [Office Policy and 2003 NFPA 1 18.2] The fire department access road must be within 150 feet of any exterior wall of a building or within 450 feet for sprinklered buildings. [2003 NFPA 1 18.2.2.2 and 18.2.2.5]

3. A fire department access road shall be provided so as to extend to within 50 feet of a single exterior door providing access to the interior of the building. [2003 NFPA 1 18.2.2.2]

*4. Fire hydrants must be provided so that any portion of the building's exterior is within 500 feet hose lay of a hydrant measured along vehicle access route. [Office Policy and 2002 NFPA 24 7.2] Check with local code authorities as some jurisdictions require closer spacing.

5. Fire hydrants must have at least a six-inch connection with the main. [2002 NFPA 24 7.1.1]

6. Hydrants must be properly supported. [2002 NFPA 24 7.3]

7. Fire hydrant locations for average conditions must be installed at least 40 feet from the building to be protected. [2002 NFPA 24 7.2.3]

8. Fire service mains must not be routed under buildings, unless special protection is provided. [2002 NFPA 24 8.3.1]

*9. Where underground water mains and hydrants are to be provided, they must be installed, completed, and in service prior to construction work. [2003 NFPA 1 16.4.3.1.3 and 2000 NFPA 241 8.7.2.3]

IV. CONSTRUCTION

*1. Building exceeds allowable area/number of stories/height for this type of construction and open space. [SBC Table 500] Sprinklered buildings must comply with 2002 NFPA 13 to receive allowable building code height, area, and number of stories. [SBC Table 500, Footnotes h and j]

2. When unsprinklered buildings exceed length or width of 300 feet, or where floor exceeds 30,000 square feet; one-hour rated fire/smoke barriers must be provided with 45-minute fire rated doors. [NFPA 101 14.3.7.1; See Exceptions] Door openings in these walls must have positive latching hardware and door closer and 1/8" clearance for proper operation without door undercuts, louvers, or grilles. [NFPA 101 8.5.3.1]

3. To receive unlimited area, the building must be Type I, Type II, or Type IV, one story, and sprinklered with one-hour fire rated smoke barrier walls subdividing the building into areas not to exceed 30,000 square feet and have a 60 foot permanent open space around the entire building. [SBC 503.4.2] Door openings in these walls must be a minimum 45-minuted fire rated assembly with rated positive latching hardware and door closer and 1/8" clearance for proper operation without door undercuts, louvers, or grilles. [NFPA 101 8.5.3.1]

*4. Firewall must be four-hour fire rated and must be constructed in such a way that the wall will remain standing after the collapse of the structure on either side. [SBC Table 600, Table 705.1.2, 704.5, and Definition 202] Wall must extend minimum three feet above combustible roof. The firewall must extend not less than 18 inches past any combustible projection or extension. Project's structural engineer must state on the drawings that. . . "This wall is a four hour fire resistant wall which extends continuously from the foundation to (noncombustible) or through (combustible) the roof, with sufficient structural stability under fire conditions to allow collapse of the construction on either side without collapse of the wall." Provide details showing how wall is structurally independent at roof.

5. Show on foundation plans and roof details the location and limits of all four-hour free standing firewalls.

6. Columns, floors, roofs, exterior and interior (bearing and non-bearing) walls, and girders must be protected in accordance with SBC Table 600 for Type _____ construction.

7. Show assumed property line between buildings and provide protection of facing walls and openings as per SBC Table 600 and SBC 705.1.1.

8. Provide a one hour fire resistant floor over any crawl space or basement beneath assembly areas in Type V unprotected construction. [SBC Table 600 Note M]

9. For unsprinklered, unprotected construction, floors located immediately above usable space in basement must have fire resistant rating of not less than one hour. [SBC Table 600 Note O]

10. Construction Type I and II partitions must be constructed of noncombustible materials or fire retardant treated wood. [SBC 609.2.1] Combustible plumbing, electrical and HVAC systems must not be contained in fire rated assemblies. [SBC 706]

11. Combustibles are not permitted in concealed spaces of Type I, II, or IV construction. [SBC 707.1]

12. Foam plastic roof insulation must be separated from the interior of the building by a thermal barrier (SBC 2603.5) unless it complies with FM 4450 or UL 1256.

13. Show draft stopping of attic area in Type V and VI construction. Specify material to be used. [SBC 2305.2.3]

14. Exterior and interior walls must be fireblocked at each floor, ceiling, and roof with an approved noncombustible material tested for this purpose. [SBC 705.3]

15. Openings within 15 feet of a property line must be equipped with opening protectives. [SBC 705.1.1]

16. Provide attic access openings (minimum 22 inches by 36 inches) and attic ventilation within each draftstop area. [SBC 2309.6 and 2309.7]

17. Show _____ hour fire rated occupancy separation between _____ and _____ occupancies. [SBC 303.1, 704, and Table 704.1] Tenant separation shall run horizontally and vertically. [SBC 704.3.1] Such separation must extend through usable crawl space to the ground below. [SBC 704.3.2]

18. Fire rated walls must extend tight against the underside of a roof or floor deck or to the underside of a rated smoke tight ceiling which has the same rating as the wall (e.g., two layers of 5/8 inch rated gypsum panels at the ceiling for tenant separation, one hour storage or janitor spaces, and one or two hour rated walls turned horizontally and anchored to the walls for corridors, elevator, stair, and breezeway ceilings). [NFPA 101 8.2.2.3] Provide details.

19. Glazing in 1-hour or 30-minute fire rated walls must be wired glass or other tested glazing material, in steel frames, no larger than 1296 square inches with no dimension greater than 54 inches. [SBC 705.1.3, Table 705.1.3.6, and 1999 NFPA 80 Chapter 13]

20. Equipment recessed in a fire rated wall must not decrease the rating of that wall. [SBC 705.5]

21. Skylights are not allowed within six feet of fire rated exterior walls. [SBC 2604.6.7]

22. Skylights or glazing at an angle less than 15 degrees from the vertical must be glazed in compliance with SBC 2405.3.1 and 2407.

23. Glazing in non-rated doors, sliding doors, storm doors, within 24 inches of doors, within 18 inches above finished floor, and exceeding 9 square feet within 36 inches of walking surface must be safety glazed, tempered, and pass the test requirements of CPSC 16-CFR, part 1201 and comply with ANSI Z97.1. [SBC 2405.1 and .2]

24. Glazing in fire rated doors must be wired glass or other tested glazing material, and must be limited in size according to door rating. [SBC 705.1.3.6]

25. Specify that fire rated doors must have fire rated frames, hardware, closers, and other rated accessories. [1999 NFPA 80 1-4 Definition of “Fire Door,” 1999 NFPA 80 1-6.1, 2-4.7, and SBC 705.1.3]

26. Closers and positive latching hardware are required on fire rated doors and doors in smoke tight partitions or barriers. [NFPA 101 7.2.1.8, 1999 NFPA 80 3-4, and SBC 705.1.3.5] Closures are not required on classroom doors in fully sprinklered building.

27. A chair rail or other visual barrier is required at glass panels that may be mistaken for door. [NFPA 101 7.2.1.1.2]

28. Concession stands must maintain corridor wall rating. Roll-up doors must be activated by smoke detectors. [SBC Table 705.1.2, SBC 705.1.3.2.3, NFPA 101 7.1.3.1, 7.2.1.8, and 14.3.6]

29. Rooms 50 square feet or greater that are used for storage, any size janitor closets, and all rooms used for storage of hazardous materials, and gas furnace rooms must be one hour enclosed with 45-minute labeled door assemblies **or** must be protected by automatic sprinklers with smoke tight partitions and solid doors with self closers and positive latching hardware. [NFPA 101 14.3.2, 8.7.1, 8.7.1.2, 8.4, 9.7.1, and SBC Table 705.1.2]

30. Regardless of construction type or fire protection, laboratory units in educational occupancies shall be separated from non-laboratory areas by one-hour construction and 45-minute fire rated door with self closers. [NFPA 101 14.3.2., 8.3, and 2000 NFPA 45 3.1.3]

31. Fuel fired water heaters with an aggregate input capacity that exceeds 200,000 BTU or 210ºF or 120 gallons or rooms 50 square feet and greater must be enclosed in one-hour fire rated construction with 45-minute labeled door assembly **or** must be protected by automatic sprinklers with smoke tight partitions and solid doors with self closers and positive latching hardware. [NFPA 101 13.3.2.1, 8.7.1, 8.7.1.2, 8.4, and 9.7.1]

32. Central boiler must be enclosed with 1-hour fire rated construction and 45-minute fire rated door with self closers and positive latching hardware. [SBC 704.1.3.3 and NFPA 101 14.3.2.1] A central boiler in an assembly occupancy requires a 2-hour fire rated enclosure and 90-minute fire rated door with self closer and positive latching hardware.

33. A shaft that does not extend to or through the underside of the roof deck of the building must be enclosed at the top with construction of the same fire resistance as the top most floor protected by the shaft, but not less than the rating required for the shaft enclosure. [SBC 705.2.3.4.1] The rated shaft enclosure must be so constructed that it will provide the required rating from the center of the shaft to the adjacent space.

34. Elevators, shafts, and machine rooms must be enclosed with one/two hour fire resistance construction. [SBC Table 705.1.2 and NFPA 101 14.3.1]

35. Elevators and dumbwaiter hoistway doors and frames must be labeled. [1999 NFPA 80 Chapter 8-1.3.1]

36. Show venting of elevator hoistways serving four stories or more. [SBC 3003.6]

37. Show detail of one/two hour fire rated construction where HVAC venting duct and metal chimneys pass through fire rated floors and/or roofs. [SBC 2804.4.1 and 705.2.2]

38. Atriums must comply with NFPA 101 8.6.7 and SBC Section 414. Entire building must be sprinklered with smoke control in atrium. [2000 NFPA 92A, 2000 NFPA 92B, and 2002 NFPA 204] See Section **VII. MECHANICAL, Item 24. of this list** for exhaust fan listing requirements so that they operate at the design conditions of smoke and fire.

    A. Define the smoke control system design concept (1) Smoke Control Systems (NFPA 92A), (2) Smoke Management Systems (NFPA 92B), or (3) Smoke and Heat Venting (NFPA 204).
    B. Provide narrative of atrium system's measurable objectives on plans.
    C. Provide narrative of testing protocol and express performance in terms of the measurements and observations that will be performed during final acceptance testing. Testing determines how well actual system performance delivers the design concept.
    D. Doors may not be used in place of air intake louvers for a smoke management system.
    E. Provide an engineering analysis demonstrating that the building is designed to keep the smoke layer interface above the highest unprotected opening **or** 72" above the highest floor level of exit access open to the atrium. [NFPA 101 8.6.7(5)]
    F. An engineered smoke control system must be independently activated by the automatic sprinkler system and manual controls that are readily accessible to the fire department. [NFPA 101 8.6.7(6) and SBC 414.4.1]
    G. Show volume of atrium on plans and include all spaces that are not separated from the atrium. [SBC 414.4.4]
    H. The communicating space is separated from the remainder of the building by 1-hour fire rated walls and 20-minute fire rated opening protectives **or**
    I. A glass wall forming a smoke barrier may be used in lieu of the fire separation wall in fully sprinklered buildings. [NFPA 101 8.6.7(1)(c), 8.5, and SBC 414.5] Glass walls (tempered and gasketed) are permitted when sprinkler protection is provided on each side of the wall spaced 72" on center and within 12" from the wall arranged so that the entire surface of the glass is wet upon activation of the sprinklers. Door openings in these walls must have positive latching hardware and door closer and 1/8" clearance for proper operation without door undercuts, louvers, or grilles. [NFPA 101 8.5.3.1]

39. Vertical opening connecting three stories or less (mini-atrium) must comply with NFPA 101 8.6.6 (1 through 8) and 14.3.1.

    A. The communicating space is not an exit. The communicating space may be used as an exit access to reach a lower floor level exterior exit door.
    B. The communicating space is separated from the remainder of the building by 1-hour fire rated walls **or**
    C. The communicating space is separated from the remainder of the building by a smoke barrier in fully sprinklered buildings. [NFPA 101 8.6.6(4)(a) and 8.5] Door openings in these walls must have positive latching hardware and door closer and 1/8" clearance for proper operation without door undercuts, louvers, or grilles. [NFPA 101 8.5.3.1]
    D. As an Equivalency, complete automatic smoke detection systems with proper occupant notification may be substituted for the openness and unobstructedness required by 8.6.6(3) for awareness and early warning purposes. A SFMO Request for Equivalency form must be completed and submitted by registrant for approval.
    E. Each occupant within the communicating space has access to not less than one exit without having to traverse another story within the communicating space. [NFPA 101 8.6.6(7)]
    F. Each occupant not in the communicating space has access to not less than one exit without having to enter the communicating space. [NFPA 101 8.6.6(8)]

40. Stages exceeding 1,000 square feet, dressing rooms, workshops and storage rooms must be separated from each other by minimum 1-hour fire rated construction with 20-minute rated doors. [SBC 403.2.6 and NFPA 101 12.4.5.4]

41. Regular stages in excess of 1,000 sf and legitimate stages shall be provided with emergency ventilation to provide a means of removing smoke and combustion gases directly to the outside in the event of a fire and shall be achieved by one or a combination of the methods specified in 12.4.5.5.1 through 12.4.5.5.3. [NFPA 101 12.4.5.5]

42. Legitimate stages must be constructed of materials of Type I construction. Construction of permanent platforms, and regular and thrust stages must be consistent with the building construction type. [NFPA 101 12.4.5.3.2, 12.4.5.3.1, and SBC 403.1.3]

43. Legitimate stages and stage height greater than 50 feet must have minimum two-hour rated proscenium wall. [NFPA 101 12.4.5.6 and SBC 403.2.5.2]

44. Laundries, maintenance and woodworking shops and painting areas must be 1-hour enclosed with 45-minute rated doors with self-closers and positive latching hardware **and** must be protected by automatic sprinklers. [NFPA 101 14.3.2.1(2), 8.7.1, and 9.7.1]

V. MEANS OF EGRESS

1. Provide accessible means of egress incorporating areas of refuge per SBC 1004.3 and NFPA 101 7.5.4.

2. Travel distance to reach an exit must not exceed 150 feet in an unsprinklered building or 200 feet in a fully sprinklered building. [NFPA 101 14.2.6] Education occupancies must have not less than two separate exits as follows: (1) provided on every story (2) Accessible from every part of every story and mezzanine. [NFPA 101 14.2.4]

3. Assembly rooms with an occupancy load of (50/500/1000) must have (2/3/4) means of egress. [NFPA 101 7.4.1.2 and SBC 1004.2.2] Each floor must have a minimum of two exits. [NFPA 101 14.2.4]

4. Main and secondary exits in assembly areas must accommodate one-half of the occupancy load. [SBC 1019.1, NFPA 101 12.2.3.6, and 12.2.3.7]

5. When two exits are required from a building or area they must be separated by (one-half/one-third if sprinklered throughout) the diagonal dimension of the building or area served. [SBC 1004.1.2 and NFPA 101 7.5.1.3.2]

6. Exit stair enclosure must be 1-hour enclosed in building with three or less stories and 2-hour enclosed in four or more story buildings in educational occupancies. [SBC Table 705.1.2 and NFPA 101 7.1.3.2.1] Where exit stairs serve an assembly, stairs must be 2-hour enclosed in new construction. Exterior stairs are not allowed as an element of a required means of egress in educational occupancies. [SBC 1006.2.1]

7. An exit enclosure shall provide a continuous protected path of travel to an exit discharge. [NFPA 101 7.1.3.2.2 and SBC 1010.3]

8. Exit stairwell doors must be 1/1½ hour fire rated and **additionally** must be rated so that the unexposed side does not exceed 450°F. [SBC 705.1.3.4 and NFPA 101 8.3.4]

9. Width of stairs must comply with SBC 1007.6, SBC Table 1004, and NFPA 101 7.3. Exits from an area of refuge in unsprinklered buildings must have a minimum 48 inches between handrails. [NFPA 101 7.2.12, 7.2.12.3, and SBC 1004.3.2.1]

10. Minimum headroom clearance in stair enclosures must be 6'-8". [NFPA 101 7.2.2.2.1 and SBC 1007.7]

11. Stair treads must be minimum 11 inches and risers must be maximum 7 inches but not less than 4 inches without square nosing and must be designed in accordance with NFPA 101 7.2.2.2.1, 7.2.2.3.4, SBC 1007.3.1, and NCAC Chapter 8.2.

12. Rise may not exceed 12 feet between floors or landings. [SBC 1007.4.1]

13. Changes in elevation of less than 21 inches in the means of egress must be by ramp or stair complying with NFPA 101 7.1.7. This includes handrails, 13-inch treads, and readily visible treads.

14. New Handrails shall be installed to provide a clearance of not less than 2¼" between the handrail and the wall to which it is fastened if wall is a rough surface such as cmu block and brick and 1½" clearance acceptable for smooth surfaces such as gypsum wallboard. [2003 NFPA 101 7.2.2.4.4.5 and A.7.2.2.4.4.5]

15. Handrails and guards must be in accordance with NFPA 101 7.2.2.4, SBC 1007.5, SBC 1015, and NCAC 8.3 such as 34" minimum to 38” maximum and 42" to top of handrails and guards; handrails on both side of stairs; 23" minimum handrail extension on wall side at bottom of stair; and four inch maximum diameter sphere for intermediate rails in guards. Guardrails are required on the open side of stairs 30 inches above floor surface. [NFPA 101 7.1.8 and 7.2.2.4]

16. Stairs serving upper floors must be separated by a barrier to prevent travel beyond the level of exit discharge. [SBC 1007.1.6]

17. One stair must extend to the roof in accordance with SBC 1008 for buildings four stories and greater in height.

18. Normally unoccupied spaces and hazardous areas may not open into an exit stairwell or exit passageway. [NFPA 101 7.1.3.2.1(5) and 7.2.2.5.3]

19. Elevators shall not be in a common enclosing shaft with a stairway. [SBC 3003.1.4]

20. Not more than 50% of the exits may discharge through areas on the level of discharge unless all of the exceptions are met. [SBC 1010.3 and NFPA 101 7.7.2]

21. Door swing may not reduce landing to less than one-half its required width. [NFPA 101 7.2.1.4.4 and SBC 1012.1.5]

22. Doors, windows, and openings within ten feet horizontal projection and extending vertically from the ground to a point ten feet above the topmost landing must be 45-minute fire protected. [SBC 1006.2.4 and NFPA 101 7.2.2.6.3(4) and 7.2.2.6.4] And the stairs must be separated from the interior of the building by one hour fire rated construction. Interior stairs must be separated in accordance with SBC Table 705.1.2, 1006.1.3.2, NFPA 101 7.2.2.5.1, and 7.2.2.5.2.

23. Rooms containing high-pressure boilers, commercial refrigeration machinery, large transformers or other service equipment subject to possible explosion must not be located directly under or adjacent to required exits from an assembly area. [NFPA 101 12.3.2.1.1]

24. Egress may not be through any space identified as a hazardous location. [NFPA 101 7.5.1.6]

25. Two means of egress must be provided from boiler, incinerator, or furnace rooms which exceed 500 square feet and fuel fired equipment, which exceeds 400,000 BTU input capacity. [SBC 1005.1] Maximum distance of travel to an egress door must not exceed 50 feet. [SBC 1005.1 and NFPA 101 7.12]

26. Minimum corridor width of six feet is required. [NFPA 101 14.2.3.2 and SBC Table 1004]

27. Corridors serving 30 people or more must be 1-hour fire rated with 20-minute fire rated door and hardware assemblies. [SBC Table 705.1.2 and NFPA 101 14.3.6] Corridors may be fire rated at 30-minutes with 20-minute rated door assemblies in fully sprinklered buildings. [Office Policy] Corridors may be unrated when student occupied spaces have doors directly to exterior. [SBC Table 704.2.4]

28. Dead ends in exits and exit access may not exceed 20 feet. [SBC 1004 and SBC 1005.2] Common path of travel may not exceed 75 feet. [NFPA 101 Table A.7.6]

29. The floor on both sides of any door must be substantially level and may not vary more than ½ inch for a distance at least equal to the width of the widest leaf. [NFPA 101 7.2.1.3 and SBC 1012.1.3]

30. Doors opening onto a corridor of minimum required width must swing 180 degrees, and not reduce the required corridor width to less than one half during its swing. [NFPA 101 14.2.5.5 and 7.2.1.4.4]

31. Each leaf of door in the means of egress must provide 32 inches clear opening and a minimum height of 6'-8", but in no case must any single door exceed 48 inches. [NFPA 101 7.2.1.2.4, SBC Table 1004, and 1012.1.1]

32. Doors serving 50 or more people and stairway doors must swing with the direction of exit travel. [SBC 1012.1.2, NFPA 101 7.2.1.4.2, and .3]

33. Every room or space with a capacity of more than 50 or more persons or where travel distance exceeds 75 feet within the room, at least two means of egress must be provided. [SBC 1004.1.2]

34. Provide a door in the folding partition. [NFPA 101 7.2.1.12]

35. Panic hardware is required on all doors with a latch or lock in the means of egress from an area having an occupant load of 100 or more. [SBC 1021.2 and NFPA 101 14.2.2.2.2] If door or doors are required fire door assemblies, only approved fire exit hardware shall be used [NFPA 101 7.2.1.7.2]

36. Show that power operated doors are capable of being manually opened to permit exit travel in the event of a power failure. [SBC 1012.2.1 and NFPA 101 7.2.1.9]

37. Doors swinging in pairs and having a fire protection rating of more than 1½ hours shall have an overlapping astragal.

38. Doors swinging in pairs, where located within a means of egress, shall not be equipped with astragals that inhibit the free use of either leaf. These forces shall be applied at the latch stile to achieve the minimum required width.

39. Where there is an astragal or projecting latch bolt that prevents the inactive door of a pair of doors from closing and latching before the active door closes and latches, a coordinating device shall be used. A coordinating device shall not be required where each door closes and latches independent of the other door.

40. Aisle accessways serving seating within assembly areas must be in accordance with SBC 1019.10.2.5, NFPA 101 12.2.5.5, and 12.2.5.6.

    A. The aisle accessway between rows of seating must have a clear width of 12 in. minimum and increases according to row length. [NFPA 101 12.2.5.1, 12.2.5.5.2, 12.2.5.5.4, and 12.2.5.5.5]
    B. Dead-end aisles shall not exceed 20 ft unless exceptions are met. [NFPA 101 12.2.5.6.2]
    C. The minimum clear width of aisles shall be sufficient to provide egress capacity in accordance with NFPA 101 12.2.3.2 but shall not be less than items (1) thru (6). [NFPA 101 12.2.5.6.3]
    D. Aisle stairs and ramps must meet NFPA 101 12.2.5.6.4.
    E. Aisle stair treads shall not be less than 11 in. [NFPA 101 12.2.5.6.5]
    F. Aisle stair risers must not be less than 4 in. and must not exceed 8 in. [NFPA 101 12.2.5.6.6(1)]
    G. Aisle handrails must meet NFPA 101 12.2.5.6.7.

41. Balcony or mezzanine with a seating capacity of over 50 but not exceeding 100 must have two separate means of egress. [NFPA 101 12.2.4.6]

42. A balcony or mezzanine having an occupant load of greater than 100 people must have a means of egress sized for a floor. The required means of egress cannot lead to the floor below, but may discharge to a rated corridor which leads to enclosed stairs (within travel distance limitations). [NFPA 101 12.2.4.7]

43. Balcony must have guardrails. [SBC 1014.1.2]

44. Unless this building is fully sprinklered, each room 250 square feet or more used for student activities must have an emergency window or door directly to the outside. [NFPA 101 14.2.11.1]

45. Emergency windows must provide a clear opening of 20 inches in width, 24 inches in height, 5.7 square feet, and be no more than 44 inches from the floor. [NFPA 101 14.2.11.1] They must have an operable latch no more than 54 inches from the floor.

46. In school building, rooms normally occupied by pre-school, kindergarten, or first grade pupils must be located on the level of exit discharge. Rooms normally occupied by second grade pupils must not be located more than one story above the level of exit discharge. [SBC 1021.1, NFPA 101 14.2.1.2, and 14.2.1.3]

47. Every assembly area shall have the occupant load posted in a conspicuous place near the main exit of the room. [SBC 403.1.2.2 and NFPA 101 12.7.8.3]

VI. INTERIOR

1. Interior finish in enclosed stairways must be Class A and exit access corridors, lobbies, and classrooms must be Class A or B unsprinklered buildings. [NFPA 101 14.3.3.2, 12.3.3.2, and SBC Table 803.3] See NFPA 101 Section 10.2 and SBC 803.2 for classification definitions.

2. Interior finish in general assembly areas with occupant loads of more than 300 must be Class A or B and assembly spaces with 300 or fewer occupants must be Class A, B or C in unsprinklered buildings. [NFPA 101 12.3.3.3 and SBC Table 803.3] See NFPA 101 Section 10.2 and SBC 803.2 for classification definitions.

3. Fixed or moveable walls and partitions, paneling, wall pads, and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, must be Class A or B in unsprinklered buildings. [NFPA 101 14.3.3.2, 12.3.3.2, 12.3.3.3, SBC Table 803.3, and NFPA Interpretation] See NFPA 101 Section 10.2 and SBC 803.2 for classification definitions.

4. Carpet in corridors, stairs, and lobbies of unsprinklered buildings must withstand 0.22 watts/cm², Radiant Panel Test (Class II). [SBC 803.8.2]

5. Carpet on walls and ceilings must be Class A. [SBC 803.5]

6. Folding partitions must comply with interior finish requirements. [SBC 803.1.2]

7. Proscenium curtains on legitimate stages must be 20-minute fire and smoke resistive and must shut automatically upon the detection of smoke. [NFPA 101 12.4.5.7]

VII. MECHANICAL

1. Penetrations of stairwells such as steam lines, gas lines, water lines, electrical conduit, and duct are prohibited. Only sprinkler piping, standpipes, electrical conduit serving the stairwell and ductwork and other equipment necessary for stair pressurization are permitted. [SBC 1006.1.3.1, SMC 408.1, and NFPA 101 7.1.3.2.1(6)]

2. Fire dampers are required where ductwork penetrates a one or more hour fire rated wall. They may be omitted in 1hr fire rated walls where the duct penetrating the wall is not greater than 100 square inches, there is no duct opening within five feet of each side of the wall, the duct material is a minimum of 26 gauge steel, and the duct is located above the ceiling. [SMC 610.1 and SBC 705.1.2.2.1]

3. Ductwork penetrating a fire rated horizontal assembly (floor-ceiling, roof-ceiling) must be enclosed within a fire rated shaft (1-hour for 3 stories or less, 2-hours for 4 stories or more). Fire dampers may be used in lieu of a shaft where only one floor is penetrated. [SBC 705.6.4.1, SMC 610.4, 2002 NFPA 90A 5.3.4.1, and 5.3.4.3.1]

4. Ductwork penetrating non-fire rated horizontal assemblies (floor assemblies) must be equipped with a fire damper where the duct connects no more than 3 stories. Ducts connecting 4 or more stories must be enclosed in a 2-hour fire rated shaft. [SBC 705.6.4.3]

5. Provide fire/smoke combination dampers in transfer air grille openings through fire rated walls. A smoke damper is required at transfer openings for unrated walls that must resist the passage of smoke such as a smoke barrier or smoke partition. [NFPA 101 8.3.4.1, 8.4.6.2, SMC 610.3, and 610.1.2(1)]

6. Smoke dampers must be installed in duct penetrations of smoke barriers, unless the duct is a part of a smoke removal system. [SMC 610.3, 2002 NFPA 90A 5.3.5, NFPA 101 8.5.4, and SBC 705.1.2.3]

7. Ceiling dampers or other methods of protecting openings in rated floor- or roof-ceiling assemblies shall comply with the construction details of the tested floor- or roof-ceiling assembly or with listed ceiling air diffusers or listed ceiling dampers. [2002 NFPA 90A 5.4.4.1, SMC 610.2, and SBC 705.6.4.2]

8. Where air ducts and openings for air ducts are used in a fire rated floor or roof-ceiling assembly all materials and the construction of the assembly, including the air duct materials, and the size and protection of the openings, shall conform with the design details of its listing. [2002 NFPA 90A 5.3.3.1]

9. Systems with a fan capacity less than 2,000 CFM and which serve a means of egress must have automatic shutdown. [SMC 406.2]

10. Systems from 2,000 to 15,000 CFM must have a duct mounted smoke detector mounted in the supply duct downstream of all filters (2002 NFPA 90A 6.4.2.1(1)) and in the return air stream prior to any exhausting from the building or mixing with fresh air makeup. [SMC 406.1] These detectors must be wired to a central control panel which is constantly monitored or be wired to a general building alarm. [2002 NFPA 90A 6.4.4]

11. Systems over 15,000 CFM must have duct mounted smoke detector shutdown and smoke dampers in both the supply and return ducts to isolate the fan from the duct system. [2002 NFPA 90A 4.3.9.2] These detectors must be wired to a central control panel which is constantly monitored or be wired to the general building alarm. [2002 NFPA 90A 6.4.4]

12. An exit access corridor cannot be used for return or exhaust from adjoining air conditioned spaces through louvers or other devices mounted in corridor doors, partitions, or ceilings. [SBC 1005.3.1] Except in SBC group I and R occupancies, this may be waived where corridors are equipped smoke detectors arranged to automatically stop supply, return and exhaust and close louvers or other devices mounted within the corridors doors, partitions, or ceilings. [SBC 1005.3.2]

13. Combustible material may not be used within a return air plenum unless it is tested for that application. [2002 NFPA 90A 4.3.10.2.6, SBC 707.2, and SMC 609]

14. Provide information showing how combustion air and ventilation are provided for the room containing fuel fired equipment. [SMC 704 and 2002 NFPA 54 8.3] Show size, free area, location of vents within 12" above finished floor and 12" below ceiling, and ¼" corrosion resistant exterior screen. [SMC 615]

15. Provide kitchen commercial cooking exhaust hood **design intent** information by an engineer competent in the design of cooking exhaust systems who currently has an active Tennessee registration. The design intent must be approved by the State Fire Marshal's Office prior to shop drawings being created and approved by the mechanical engineer of record (processed with the engineer's shop drawing review stamp). [Rule 0780-2-3-.03(1)(a)] See the attached kitchen Hood and Duct Design Intent Ventilation Control and Fire Protection of Commercial Cooking Operations correction list.

16. Complete kitchen commercial cooking exhaust hood and duct system **shop drawings** for removal of grease-laden vapor must comply with 2001 NFPA 96 and SMC 504. Essential features of the system must be submitted and include (1) third party listed exhaust hood(s), (2) listed exhaust and supply fans, (3) fixed fire suppression system details furnished and installed by a Tennessee licensed firm, and (4) exhaust duct system. Shop drawings must be submitted and approved prior to installation after approved by the mechanical engineer of record (processed with the engineer's shop drawing review stamp). [Rule 0780-2-3-.03(3)] Hood suppression systems must meet UL 300. Shop drawing information is generally a stipulation on the plans upon initial approval of the project.

17. Gas lines may not penetrate a four-hour firewall. The areas are considered separate buildings. [1999 Standard Gas Code 310.2.2]

18. A separate and individual ventilation system, not part of any other system, must be provided for ventilation of each room or space containing flammable vapors, combustion vapors, noxious gases, and flammable dusts. [SMC 401.2]

19. Chimney, vent, or sanitary sewer exhaust outlets within ten feet of fresh air intakes must be at least two feet higher than the intake. [SMC 405]

20. Chimneys must extend three feet above the roof and at least two feet above any part of the roof within a ten foot radius. [SMC 803.4]

21. The exhaust outlet ducts and ducts serving commercial cooking and processing equipment must terminate outside the building and must be located ten feet from any adjacent building, parking area, adjacent property line, window, door or air intake opening and must be at least ten feet above adjoining grade level and must terminate at least 40 inches above roof surface. [SMC 506.1]

22. Dryer ducts must be installed per the equipment manufacturer's instructions or the methods described in SMC 509.2.

23. Where earthquake loads are applicable according to the SBC, mechanical equipment, piping, and ducts must be designed and installed to resist the seismic forces in the SBC. [SMC 301.4.1]

24. If required to have a smoke management system for atria, malls or other large areas, provide a listed exhaust fan to operate at the design conditions of smoke and fire. The system must meet UL category UUKL. Use NFPA 2002 92B, Guide for Smoke Management Systems in Malls, Atria, and Large Areas, 2000 NFPA 92A, Recommended Practice for Smoke-Control Systems, for mechanical smoke control between fire-compartmented building spaces separated by smoke barriers and 2002 NFPA 204, Guide for Smoke and Heat Venting, for gravity venting. This guide is not intended to apply to warehouses, manufacturing facilities, or other similar spaces.

VIII. FIRE SUPPRESSION

1. School buildings containing assembly occupancies with more than 300 people must be sprinklered **throughout the story containing the assembly occupancy** unless they meet the exceptions. [NFPA 101 12.3.5.1 and 12.3.5.2]

2. Provide sprinkler **design intent** information by an engineer competent in the design of fire protection systems who currently has an active Tennessee registration. The design intent must be approved by the State Fire Marshal's Office prior to shop drawings being created and approved by the fire protection engineer of record (processed with the engineer's shop drawing review stamp). [Rule 0780-2-3-.03(1)(a)] See the attached Sprinkler Design Intent correction list.

3. Complete sprinkler **shop drawings** and associated calculations must be drawn and signed by a Tennessee registered fire protection sprinkler contractor's responsible managing employee. The sprinkler shop drawings and associated calculations must be reviewed and approved by the fire protection engineer of record (processed with the engineer's shop drawing review stamp) only after the design intent has been approved by this office. Shop drawing information is generally a stipulation on the plans upon initial approval of the project. [Rule 0780-2-7-.09 and Office Policy]

4. All piping from the "point of service" including underground used for sprinkler or standpipe system must be installed by a Tennessee registered sprinkler contractor. [Rule 0780-2-7-.08] **Show location of "point of service" for the underground sprinkler piping on the site plan and provide a note stating that the installation must be performed by a Tennessee registered sprinkler contractor.** If there is an existing sprinkler system in the building, a Tennessee registered sprinkler contractor must inspect, test, and provide a letter of acceptance or new inspection report for the existing system showing no deficiencies.

5. Provide general layout of sprinkler system and show main risers, related electrical connections, available water supply and design water demand. [2002 NFPA 13]

6. All portions of the building below exit discharge must be sprinklered. [NFPA 101 14.3.5.1]

7. All stages greater than 1,000 square feet in middle, junior high, and high schools must be sprinklered including all auxiliary spaces and dressing rooms, storerooms, and workshops. [NFPA 101 12.4.5.10 and SBC 903.7.2.2]

8. Class I wet standpipes must be provided in all buildings where the highest floor is 30 feet above the lowest level of fire department access. [SBC 904.2.1 and 3.1] Standpipe hose connections must be located per NFPA 101 14.5.3.

9. Provide class III (fire department and occupant use) standpipes on each side of a legitimate or regular stage (1,000 square feet). [SBC 904.2.3 and 3.2]

10. Provide a fire protection pump schematic with all-component parts and alarms. [1999 NFPA 20]

11. Portable fire extinguishers shall be provided per 2003 NFPA 1 Table 13.6.1.2 and 2002 NFPA 10.

IX. ELECTRICAL

1. Provide emergency lighting for assembly areas, stairs, aisles, corridors, exitways, normally occupied windowless spaces, labs, shops, all flexible and open plan buildings and to **path of egress travel to a public way**. [NFPA 101 **7.8.1,** 12.2.9, 14.2.9 and SBC 1016.2]

2. Emergency lighting must have stand-by power source, [NFPA 101 7.9.2, 2002 NFPA 70, Article 700, and SBC 1016.2.1] automatically providing the required illumination in the event of any interruption of normal lighting in areas where emergency lighting is required by SBC 1016 and NFPA 101 7.8, due to any of the following:

   A. Failure of a public utility or other outside electrical power supply.
   B. Opening of a circuit breaker or fuse.
   C. Manual act(s), including accidental opening of a switch controlling normal lighting facilities.

3. Exit signs must be visible from all directions of travel. [NFPA 101 7.10.1.2 and SBC 1016.3] Tactile exit signage shall be located at each exit enclosure door. [NFPA 101 7.10.1.3]

4. Exit signs must have an emergency power source or be a listed self-illuminating type sign. [NFPA 101 7.10.4, SBC 1016.3.5, and 2002 NFPA 20 Article 700.12(e)]

5. Recessed light fixtures in rated ceilings must be protected or be listed for use in a rated assembly. [SBC 705.4]

6. A fire alarm system with an emergency power source is required. [NFPA 101 14.3.4.1, 2002 NFPA 72 1.5.2.5, and SBC 905.1] Provide fire alarm per 2002 NFPA 72 (see Fire Alarm Correction List).

7. In a building with a sprinkler system, activation of fire alarm by sprinkler system must be provided also. [NFPA 101 9.7.2 and SBC 903.8]

8. Fire Alarm occupant notification for assembly occupancies over 300 occupants (such as gymnasiums, auditoriums, cafeterias, etc.) shall be by visual signals and pre-recorded evacuation signal. [NFPA 101 12.3.4.3 and 12.3.4.3.4]

9. Provide visible signal alarm notification for all student occupied spaces including individual classrooms. [NFPA 101 14.3.4.3.1.1, 9.6.3, 9.6.3.5, 2002 NFPA 72 7.5, and 2002 NCAC 17.1.2]

10. In areas not continuously occupied that contain controlling equipment, automatic smoke detection must be provided at each control unit(s) (i.e., fire alarm control panel, etc.). Heat detection is permitted if ambient conditions prohibit installation of smoke detection. [2002 NFPA 72 4.4.5]

11. Smoke detectors controlling hold open devices must be located in accordance with 2002 NFPA 72 5.14.6. Hold open devices must release in accordance with NFPA 101 7.2.1.8.1, and must be tied into the fire alarm system per NFPA 101 9.6.5.2.

12. Each floor must be zoned separately. No one zone may exceed 15,000 square feet. [SBC 905.1.3] See exceptions for sprinklered buildings.

13. Where the emergency generator is used for back-up power, it must provide power within ten seconds. [NFPA 101 7.9.1.3]

14. Working space(s) in front of electrical equipment is a minimum of three-foot horizontal, six and a half foot vertical and thirty inches minimum width. [2002 NFPA 70 110.26(A)(1-3), Table 110.26(A)(1), and 408.8] Dedicated equipment space(s) is equal to width and depth of the equipment extended from floor to a height six feet above equipment or the structural ceiling whichever is less. [2002 NFPA 70 110.26(F)(1)] Working space(s) may not be used for storage and may not contain ductwork, piping, etc.

15. Electrical outlet boxes located on opposite sides of rated walls must be separated by a horizontal distance of 24 inches. [SBC 705.5.2]

16. Nonmetallic-sheathed cable (types NM and NMC) may not be used in fire resistive components of a building with assembly occupancy over 50, in a four or more story building, or in Type I or II construction. [2002 NFPA 70 336.4 and SBC 706]

16. Provide balanced electrical panel load schedules. [2002 NFPA 70 220.3 and 220.4]

17. Show the following electrical and fire alarm connections (could be by specifications):

    A. Location of connections of all air handling shutdowns.
    B. Location of connections to the kitchen hood fire extinguishing system that activates the fire alarm system. Show other required shutdowns in the event the extinguishing system is activated.
    C. Location of all connections to shunt trip circuit breakers and gas solenoid valves unless a mechanical gas line shut-off is specified.
    D. Location of flow switch or alarm check valve connection to the general building alarm and central station or fire department.
    E. Location of supervisory alarm connection from tamper switches on sprinkler system.

18. Electrical equipment rated for 1200 amperes or more and over 6 ft wide, containing overcurrent devices, switching devices, or control devices, there shall be one entrance not less than 32 in. wide and 6½ ft high at each end of the working space. [2002 NFPA 70 110.26(C)(2)] Both entrances shall open in the direction of the egress and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure. [2002 NFPA 70 110.26(C)(2) and NFPA 101 7.2.1.2.4]

19. Dry-type transformer installed indoors and rated 112½ kVA or less shall have a separation of at least 12 in. from combustible material unless separated from the combustible material by a fire-resistant, heat-insulated barrier. [2002 NFPA 70 450.21 (A)]

20. Individual dry-type transformers of more than 112½ kVA rating shall be installed in a transformer room of minimum 1 hour fire-resistant construction, unless specified otherwise in Article 2002 NFPA 70 450.21(B).